May 1, 1962 L. E. WILEY ETAL 3,031,707

MOP FRAME AND HANDLE ASSEMBLY

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Fig. 1

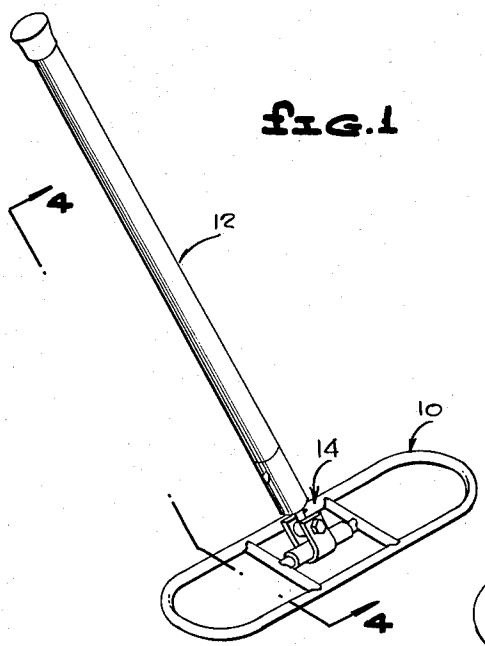


Fig. 2

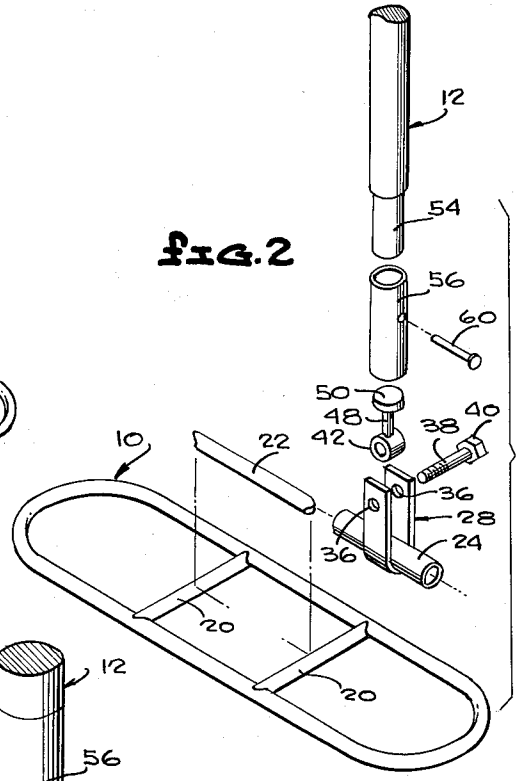
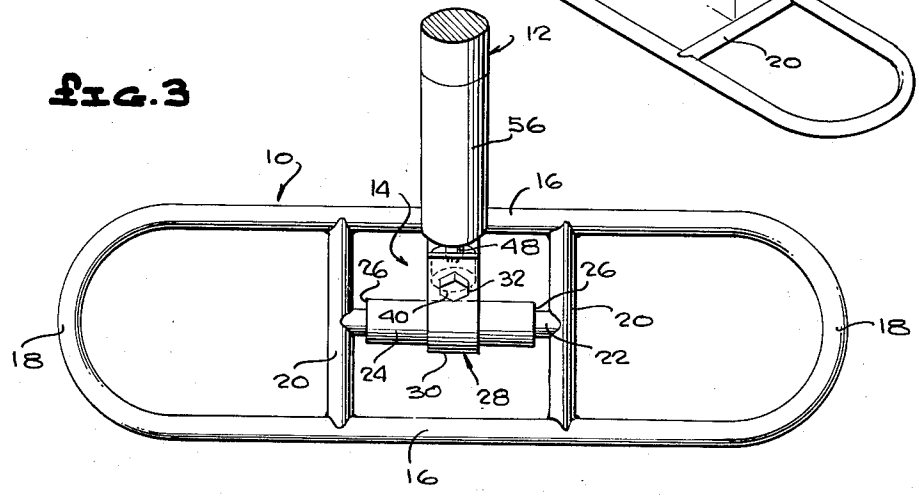


Fig. 3



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FIG. 4

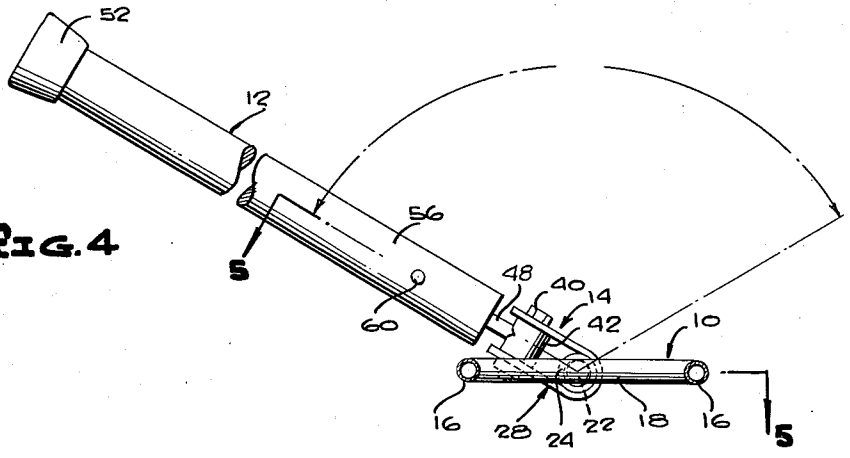


FIG. 5

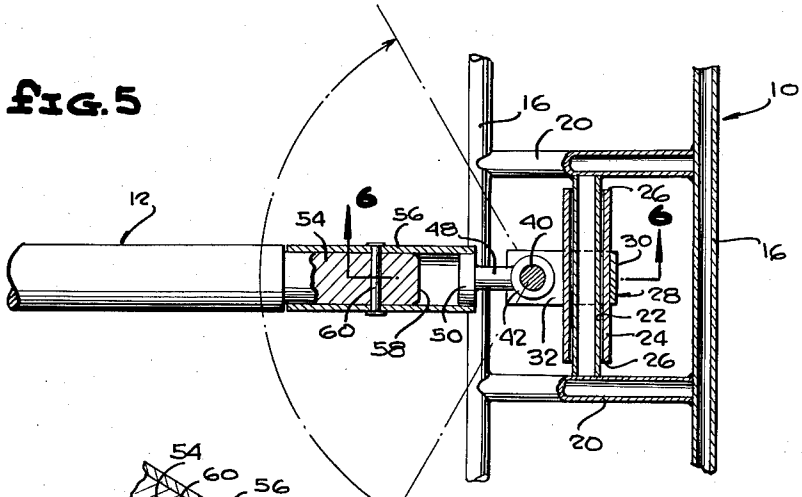
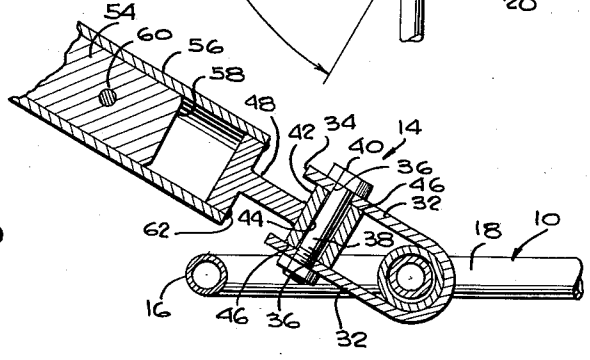


FIG. 6



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MOP FRAME AND HANDLE ASSEMBLY

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1 Claim. (Cl. 15—147)

This invention relates to a novel and improved frame and handle assembly for mops and the like.

The primary object of the invention is the provision of an assembly of the kind indicated which is designed to reach a mop or the like, secured on its frame, more easily and effectively into inaccessible places, such as corners of floor areas to be mopped, and beneath closely overhanging objects, the handle of the assembly being swivelly connected to the frame for reciprocating the frame relative to a surface to be cleaned, such as a floor, with the handle rotated relative to the frame and extending either laterally or longitudinally relative to the frame, and with the handle disposed at any desired angle relative to the frame, through an arc of substantially 180°.

Another object of the invention is the provision of a rugged and mechanically superior assembly of the character indicated above, which meets the heavy duty service requirements of commercial cleaning operations.

A further object of the invention is the provision of an assembly of the character indicated above, wherein the service unit which connects the handle to the frame is of novel and more rugged serviceable construction, and is composed of a small number of simple and easily assembled parts, certain of the parts being readily replaceable when worn, so as to eliminate the cost and labor involved in replacing the entire unit when such parts become worn.

Other important objects and advantageous features of the invention will be apparent from the following description and the accompanying drawings, wherein, for purposes of illustration only, a specific form of the invention is set forth in detail.

In the drawings:

FIGURE 1 is a perspective view of an assembly of the present invention;

FIGURE 2 is an exploded perspective view of said assembly;

FIGURE 3 is an enlarged top plan view of the assembly, the handle being broken away;

FIGURE 4 is a contracted vertical transverse view taken on the line 4—4 of FIGURE 1;

FIGURE 5 is a fragmentary horizontal section taken on the line 5—5 of FIGURE 4; and,

FIGURE 6 is an enlarged fragmentary vertical transverse section taken on the line 6—6 of FIGURE 5.

Referring in detail to the drawings, wherein like numerals designate like parts throughout the several views, the illustrated assembly comprises a frame **10**, a handle **12**, and a swivel unit **14** which connects the handle **12** to the frame **10**.

The frame **10** is a longitudinally elongated open oblong form composed of straight parallel side members **16** which are connected together, at their ends, by arcuate end members **18**. A pair of laterally spaced parallel transverse cross bars **20** extend between and are fixed to the side members **16**, at the middle of the frame, and a longitudinal axle **22** extends between and is fixed, at its ends, to the cross bars **20** and is parallel to and equidistantly spaced from the side members **16**.

The axle **22** is a component of the swivel unit **14**, which further comprises an elongated journal sleeve **24** which is rotatably circumposed on the axle **22** and has free ends **26** which approach and have some clearance

relative to the inner sides of the cross bars **20**. A U-shaped yoke **28** has an arcuate bight portion **30** conformably engaged with and suitably fixed to a side of the middle of the journal sleeve **24**, and flat parallel legs **32** which extend equidistantly beyond the opposite side of the sleeve and have free ends **34** near which the legs **32** are formed with aligned bolt holes **36**, which accommodate the shank **38** of a machine pivot bolt **40**.

The swivel unit **14** further comprises a cylindrical head **42** having an axial bore **44**, rotatably receiving the bolt shank **38**, and squared ends **46** which bear against the inward sides of the yoke legs **32**. A radial shank **48** is fixed, at one end, to the middle of the head **42**, and has an enlarged diameter flat cylindrical disc **50** fixed axially on its other end, and serving as the connection between the swivel unit **14**, and the handle assembly **12**.

The handle **12** is preferably straight and provided on its rear end with a hand-grip cap **52**. The handle has a reduced diameter forward end portion **54**, on which is circumposed a rigid metal coupling tube **56**, which reaches forwardly beyond the forward end **58** of the reduced end portion **54**. The coupling tube **56** is fixed axially to the cylindrical disc **50**, as by insertion of the disc in the open forward end of the tube, and securement of the disc therein, as by means of welding **62**.

In use and operation, a mop or the like (not shown) being secured to and around the frame **10**, and the frame and mop being applied flatwise to a surface to be cleaned, the frame can be reciprocated on such surface, either endwise or crosswise, or at any desired angles, in order to reach relatively inaccessible areas, by rotating the handle **12** to any desired vertical angle, on the axis of the axle **22**, as indicated in FIGURE 4, through an arc of substantially 180°, or to any desired horizontal angle, on the axis of the pivot bolt **40**, through an arc of at least 180°, and to any desired vector angles between the vertical and the horizontal.

Although there has been shown and described herein a preferred form of the invention, it is to be understood that the invention is not necessarily confined thereto, and that any change or changes in the structure of and in the relative arrangements of components thereof are contemplated as being within the scope of the invention as defined by the claim appended hereto.

What is claimed is:

A mop frame and handle assembly adapted for heavy duty cleaning operations and for cleaning under and around obstacles comprising:

(*a*) a longitudinally elongated, open frame having parallel side members and end members extending between the side members;

(*b*) a pair of substantially parallel, spaced, transverse cross-bars extending between and fixed to the side members;

(*c*) a longitudinal, substantially cylindrical, axle extending between and fixed to the cross-bars;

(*d*) the axle, cross-bars, and frame being substantially coplanar;

(*e*) a tubular journal sleeve having a horizontal major axis and being rotatably circumposed on said axle;

(*f*) a yoke, including a bight portion and spaced legs, the bight portion secured to the journal sleeve and the legs extending outwardly on opposing sides thereof;

(*g*) a substantially cylindrical head positioned between the legs, the head having a horizontal bore therein the axis of which is perpendicular to the axis of the journal sleeve;

(*h*) a pivot extending between the legs and through the bore of said head, whereby the head is pivotally

secured to the legs for swinging movement in at least a 180° arc; and

(*i*) handle means secured to the head.

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